Patent claims:

1. Measuring device (6) for connection to a drill column (3) for deep wells, having an electrically operated measuring unit (40) for measuring relevant data relating to the rock, the drilling mud and/or the raw material to be obtained, the measuring device (6) being designed for supplying electrical energy via the drill column (3) and for data transfer to the surface likewise via the drill column (3), **characterized** in that an outer housing (41) of the measuring device (6) having at least one inflow opening (51) and at least one outflow opening (48) is provided, and in that the housing (41) has screw connections at its two ends for connection to the drill column (3) and/or the bit device (5).

2. Measuring device according to Claim 1, characterized in that the measuring device (6) has an associated evaluation device (8) arranged at the surface, and in that the measuring device (6) is electrically coupled to the evaluation device (8).

3. Measuring device according to one of the preceding claims, characterized in that a transformer (44), in particular a voltage transformer, is provided for the purpose of converting measured signals for subsequent transmission to the evaluation device (8) and/or in that the evaluation device (8) is designed such that the measured signals are derived from the energy consumption of the measuring unit (40).

4. Measuring device according to one of the preceding claims, characterized in that the measuring unit (40), if necessary, has a plurality of in particular modular measuring instruments for the purpose of recording various data.

5. Measuring device according to one of the preceding claims, characterized in that the measured value pickups of the measuring unit (40) are directed in a flow path (45) within the housing (41).

6. Measuring device according to one of the preceding claims, characterized in that at least one electrically operated pump (46), which is connected in terms of flow to the measuring unit (40), is provided in order to supply the medium under investigation to the measuring unit (40).

7. Measuring device according to one of the preceding claims, characterized in that an electrically operated valve unit is provided in order to divert the medium under investigation, if necessary, into the annular space or the drill column.

8. Measuring device according to one of the preceding claims, characterized in that at least one filter (49) and/or valves (50) are connected upstream of the pump (46).

9. Measuring device according to one of the preceding claims, characterized in that an electrically operated, in particular electrohydraulic packer (52) is provided.

10. Measuring device according to one of the preceding claims, characterized in that the packer (52) has a plurality of packer segments, which at least partially overlap one another at least in the inserted state.

11. Measuring device according to one of the preceding claims, characterized in that an in particular electrically operated lubricant supply device (53) is provided for the purpose of applying a layer of lubricant to the upper side of the packer in the withdrawn state of the packer or when the packer is being withdrawn.

12. Measuring device according to one of the preceding claims, characterized in that an electrically operated control unit (44) is provided for the purpose of driving the functional units, as necessary.

13. Measuring device according to one of the preceding claims, characterized in that an energy store (55) is provided in the housing (41).

14. Measuring device according to one of the preceding claims, characterized in that the inflow opening (51) of the housing (41) is provided beneath the packer (52), and the outflow opening (48) is provided above the packer (52).

15. Measuring device according to one of the preceding claims, characterized in that a string section, which communicates with the drill column (3) and has a through-opening, is provided in the housing (41), and in that, preferably, a nonreturn valve (56) closing the through-opening is associated with the string section.

16. Drilling apparatus (1) for deep wells, having a drill column (3), having at least one measuring device (6) according to one of the preceding claims and having an evaluation device (8) which is arranged at the surface and is electrically coupled to the measuring device (6).

17. Drilling apparatus according to Claim 16, characterized in that a bit unit (5) is provided, and in that the measuring device (6) is connected with its lower end to the bit unit (5).